DETAILED ACTION

Claims 1-15 are pending. Claim 15 is withdrawn from consideration. **Claims 1-14 are under consideration** in the instant office action. Pursuit to a pre-appeal panel decision dated September 9, 2011, ***prosecution of the instant application is re-opened*** and **finality** of the office action mailed on May 12, 2011 **is withdrawn**. All rejections/objections not explicitly maintained in the instant office action have been withdrawn per Applicants' claim amendments and/or persuasive arguments.

Election/Restrictions

Newly submitted amended claim 15 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the claimed composition of claim 1 can be prepared by a materially different method, such as by spray drying components (a) and (b) separately and mixing the resulting powders to obtained the claimed composition.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, **claim 15 is withdrawn from consideration** as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on applications filed in the United Kingdom on August 21, 2001. It is noted, however, that applicant has not

filed certified copies of GB 0219513.7 and GB 0219513.9 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller et al. (US 6,645,466) as evidenced by "Spray Performance Considerations" (accessed on September 7, 2011 at www.spray.com/cat70/cat70pdf/ssco_cat70_a60.pdf) and Batycky et al. (US 2003/0180283 A1).

Applicant Claims

Applicant claims a dry powder inhalation composition comprising, (a) medicament particles, and (b) a mixture of lactose particles with a VMD of between about 70 and about 120 microns and a diameter of less than 250 microns, wherein up to 96% by weight of the lactose particles are less than 150 microns in diameter and wherein up to 25% by weight of the lactose particles are less than 5 microns in diameter.

Determination of the scope and content of the prior art (MPEP §2141.01)

Keller et al. teach **dry powder formulations for inhalation and delivery to the lung** comprising a pharmaceutically ineffective carrier of not-inhalable size and a finely divided pharmaceutically active compound of inhalable particle size (see the abstract, column 1, lines 16-21, and the Examines). **The pharmaceutically active compound of an inhalable size has a mean mass aerodynamic diameter (MMAD) of at most 10 microns** (see column 4, lines 56-67 and column 6, lines 2-7). The particles can be prepared by spray- drying or micronization (see column 6, lines 7- 12). Examples of pharmaceutical actives include formoterol, fenoterol, etc. (see column 6, lines 13-37). One or more actives may be used see column 6 lines 35-37). **The actives are present in an amount of 0.1 to 10% by weight of the formulation** (see column 7 lines 11-21). **The non-inhalable coarse carrier particles have a mean mass aerodynamic diameter (MMAD) of about 10 to 500 microns** (see column 7, lines 40-53). **The formulation can also contain a proportion of inhalable carrier particles having a particle size diameter (as (MMAD) of at most 10 microns and are present in the formulation in an amount of 0.1 to about 10% by weight** (see column 8, lines 8-16, and

claims 1-6). **The carrier material may be present in a total amount of 80 to 99.9% by weight** (see column, 8 lines 22-25). **Examples of the carrier include lactose** (see column 5, lines 58-65 and column 8, lines 1-9). The optimum particle size of the carrier depends on the demands and specifications of the powder inhaler intended for administration of the formulation (see column 7, lines 40-53). **Examples 1-6 teach lactose monohydrate having a broad range of particle size distribution**.

Spray Performance Characteristics is being cited to establish that volume median diameter (VMD) is equivalent to mass median diameter.

Batycky is being cited to establish the conversion between MMAD values and VMD or MMD as evidenced by the equation in paragraph [0021] [i.e. $d_{MMAD} = (d_g \times (density)^{0.5})$, wherein d_{MMAD} is the diameter as expressed in MMAD and d_g is the measured volume geometric median diameter).

Ascertainment of the Difference Between Scope the Prior Art and the Claims (MPEP §2141.012)

Keller lacks the explicit teaching of carrier particles having a volume median diameter ranging between 70-120 microns; however, this teaching is implicit to Keller's teachings as explained below.

Finding of Prima Facie Obviousness Rationale and Motivation (MPEP §2142-2143)

A person of ordinary skill in the art would have been motivated to make a dry powder formulation comprising lactose particles having a volume median diameter ranging between 70

and 120 microns because this range is implicitly within the range of course particle sizes taught by Keller and expressed in terms of MMAD. Using the equation taught by Batycky in paragraph [0021] to convert Keller's course carrier MMAD range of about 10 microns to about 500 microns into VMD and assuming particle densities of (i) 0.5 g/cc, (ii) 1.0 g/cc, (iii) 2.0 g/cc, and (iv) 3.0 g/cc it is determined that Keller implicitly teaches the following VMD ranges based on the different assumed densities: (i) about 7 microns to about 354 microns, (ii) about 10 microns to about 500 microns, (iii) about 14 microns to about 707 microns, and (iv) about 17 microns to about 8.66 microns, respectively. It is also noted that the density of water at room temperature is approximately 1.0 g/cc and that many organic compounds would be reasonably expected to have densities around 1.0 g/cc or less. Thus, as evidenced by the calculated VMD values based on Keller's course carrier particle size range expressed in terms of MMAD, it is clear that Keller's teachings implicitly teach overlapping VMD range for carrier particles. A prima facie case of obviousness necessarily exists when the prior art range overlaps or touches a claimed range, such as in the instant rejection. MPEP § 2144.05. Moreover the ordinary skilled artisan would have had a reasonable expectation of obtaining dry powder formulations made according to Keller's teachings that have overlapping carrier VMD ranges with the carrier VMD recited in Applicants' claims. Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because the combined teachings of the prior art is fairly suggestive of the claimed invention.

Response to Arguments

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection. It is noted that although the primary reference of the instant rejection remains the same the previously cited secondary reference has been removed and a new evidentiary reference has been cited. Thus, the instant rejection is considered a new ground of rejection.

Conclusion

Claims 1-14 are rejected. Claim 15 is withdrawn by original presentation. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Alstrum-Acevedo whose telephone number is (571) 272-5548. The examiner is on a flexible work schedule, but can normally be reached Monday-Friday from ~10:00 AM EST to 6:00 pm EST and on Saturdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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